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## Real Time Traffic Information Workbook

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Model: E9x, E60, E61, E63, E64 with CCC (SA609)

Production: From 9/2006 Production

# OBJECTIVES

After completion of this module you will be able to:

- Explain the benefits to the RTTI Feature

- Know what areas of coverage are available

- Be able to activate and deactivate the RTTI feature

# Introduction

For the first time in the US market, BMW is introducing the availability of Real Time Traffic Information (RTTI). RTTI offers real time information on traffic conditions as well as dynamic rerouting if a destination is entered in the navigation system.

This feature will be introduced on vehicles equipped with a CCC based navigation system in the following 2007 model vehicles: E70 X5, E60/61/63/64, and E9x models.

Unlike other automobile manufacturers that charge a recurring monthly fee for RTTI, or require customers to pay for an additional satellite radio service, BMW has included RTTI as part of the cost of the navigation system. There are no activation fees or recurring monthly charges to BMW customers for 4 years.

BMW's new RTTI service will be available in as many as 44 major metropolitan markets through Clear Channel's Total Traffic Network, Clear Channel Radio's award-winning programming and technology service. It delivers Real Time Traffic Information directly to vehicles over its extensive network of FM radio stations.

With the help of Clear Channel's broadcast network, customers no longer have to search for traffic reports on radio stations to be in-the-know about traffic situations.

Up-to-date traffic information is compiled from a variety of sources including FM radio stations, highway-embedded sensors, video monitors on bridges and roadways, and local traffic monitoring centers.

Traffic data is then streamed to a dedicated tuner in the car's radio and transferred directly to the navigation system.

Customers can receive traffic updates from a variety of stations, 24 hours a day, seven days a week. The radio does not have to be turned on nor does it interfere when the customer is listening to other entertainment sources such as a CD or iPod.

If a destination is entered in the navigation system, the best route is calculated with consideration to the traffic incidents and potential delays.

In addition to alerting the driver to where the traffic is, if the delay is calculated to be more than 5 minutes then the navigation system will offer alternative routes around the congestion, either automatically or at the choice of the driver.

The following highlights of the Real Time Traffic Information service provide benefits to the customer and help BMW drivers avoid traffic delays:

- Navigation system provides dynamic alternate routes automatically while in route guidance mode.
- Navigation system provides last exit warnings with detour option if delay is more than 5 minutes.
- Traffic incidents are displayed as icons on the map display, or in a list format sorted by distance from current location.
- Traffic incidents on a planned route are highlighted by a yellow diamond.
- There is no activation fee or monthly subscription fee
- Satellite Radio option is not required

## Coverage

Real Time Traffic Information is planned to be available in the following metropolitan markets:



| | | |
|---|---|---|
| Atlanta, GA | Columbus, OH | San Antonio, TX |
| Milwaukee, WI | Phoenix, AZ | Jacksonville, FL |
| Austin, TX | Dallas-Ft. Worth, TX | San Diego, CA |
| New Orleans, LA | Pittsburgh, PA | Kansas City, MO |
| Baltimore, MD | Denver-Boulder, CO | San Francisco - San Jose, CA |
| New York City – Metropolitan area | Portland, OR | Las Vegas, NV |
| Boston, MA | Detroit, MI | Seattle-Tacoma, WA |
| Minneapolis-St. Paul, MN | Providence, RI | Los Angeles – Riverside, CA |
| Charlotte, NC | Greensboro, NC | St. Louis, MO |
| Nashville, TN | Raleigh-Durham, NC | Memphis, TN Tampa, FL |
| Chicago, IL | Hartford-New Britain-Middletown, CT | Miami - West Palm Beach, FL |
| Norfolk, VA | Sacramento, CA | Washington, DC |
| Cincinnati, OH Orlando | Houston, TX | |
| Cleveland, OH | Salt Lake City, UT | |
| Philadelphia, PA | Indianapolis, IN | |

## Components

The RTTI system has been fully integrated by utilizing control modules already present in a vehicle equipped with a CCC based navigation system.

The systems and components interfaced with are:

- Car Communication Computer (CCC)
- Central Information Display (CID)
- Audio Amplifier
- FM Antenna (utilizing the diversity module)
- Designated FM Tuner (inside CCC)

### Car Communication Computer

The RTTI system utilizes the digitize maps starting with the 2007.1 version DVD.

The system also utilizes the double tuner feature of the CCC to constantly receive traffic messages whenever RTTI is enabled.

Because of the double tuner, the system is capable of receiving traffic information even if the audio source selected is in the FM or AM band.

# Principles of Operation

Real Time Traffic Information is delivered to the vehicle over a comprehensive network of FM radio stations managed by Clear Channel Broadcasting, the nation's #1 FM broadcasting company; operating an extensive network of over 1200 FM stations in United States. Clear Channel's Real Time Total Traffic Network is operational 24 hours, 7 days per week.

Once enabled by the driver in the settings iMenu, the traffic receiver is always on and receives data in the background regardless of the driver's audio entertainment operating status or source.

Real Time traffic information is received by a dedicated tuner within the radio and the service is available whenever the vehicle is within range of signal in a covered market.

The symbol, TI+ (TI from 3/07) is displayed on the lower status bar of the navigation screen whenever a traffic signal is available. The traffic information events are updated every 4 minutes automatically by the service provider. To further ensure best in class service, most markets have redundant or backup transmission capabilities.

## Other Technology

Until now current OEM traffic services were only available via XM and Sirius. Both providers utilize data provided by a NAVTEQ traffic database; this database uses multiple external vendors who supply the data. These services are primarily aftermarket driven supporting such devices Alpine, Siemens, Garmin and TomTom.
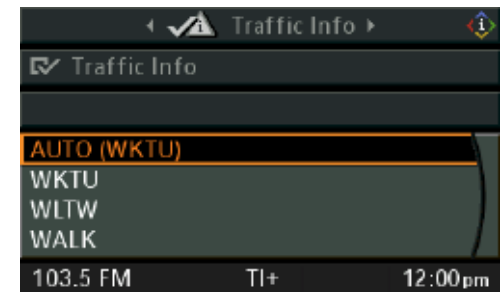
This service would require a monthly service charge for both the satellite radio as well as the traffic information.

Note: NAVTEQ navigation data is separate from NAVTEQ traffic data.

## Enabling the Service

The RTTI feature has to be enabled on the vehicle using the fifth menu of the iDrive concept using the following path:

Settings => Traffic info



The lower portion of the Traffic Info page displayed on the CID menu will show the available FM radio stations that are broadcasting RTTI compatible traffic information.

The user can select the desired station or allow the second tuner in the CCC to automatically select the station for them by using the iDrive controller.

Note: It is recommended that the radio should be set to "Auto" so that the system will receive data from the station with the strongest received signal.

## Retrieving Traffic Messages

There are three possible areas in the iDrive menu where the messages can be retrieved:

- Fifth Menu => Info Sources => Traffic Info

- Navigation Menu => Traffic Info

- Traffic Info Icon (on the shortcut menu left of map)



The BMW Real Time Traffic Information feature will display all the messages broadcast in the coverage area in order of proximity. In order to view all messages the user is required to scroll through the carousel. The messages are not listed by direction of travel related to the vehicle so all messages which surround the vehicle will also be included in the view.
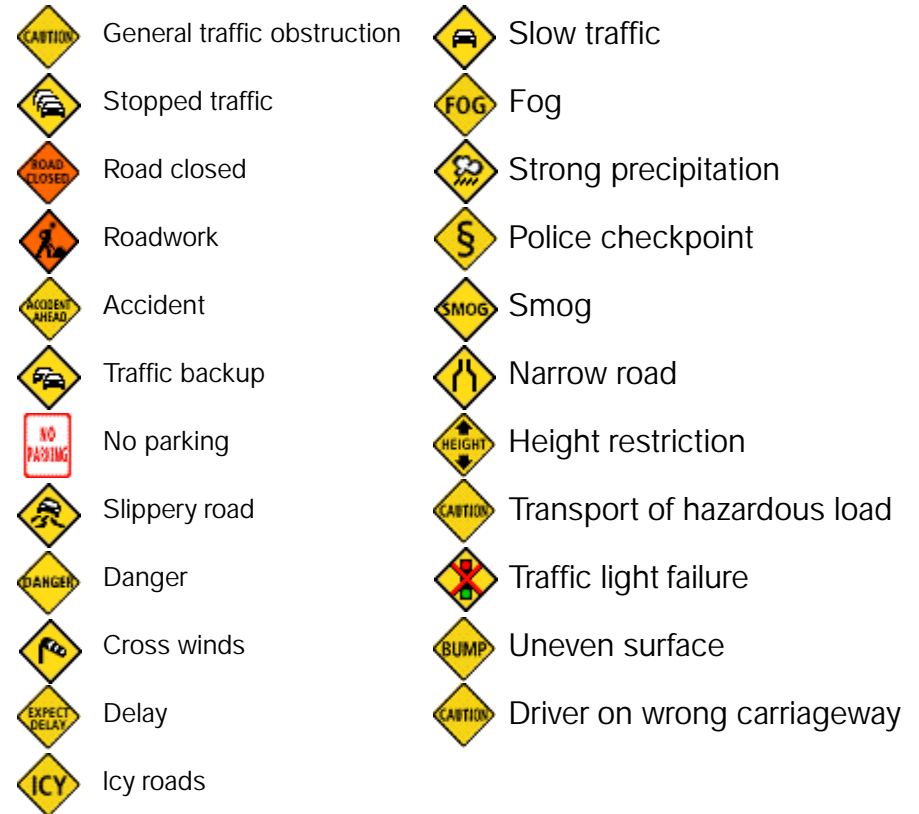
To acquire detailed information on a particular message, select the message with the controller.



Note: When the user first enters the message list, there may either be a "currently no reception" or a "Transferring messages" if the information is not yet available.

## Traffic Message Icons

There are currently 21 icons available that can be displayed on the digital map. The color turns from white to yellow if an incident is in the desired route path during guidance.

| | | | |
|---|---|---|---|
|  | General traffic obstruction |  | Slow traffic |
|  | Stopped traffic |  | Fog |
|  | Road closed |  | Strong precipitation |
|  | Roadwork |  | Police checkpoint |
|  | Accident |  | Smog |
|  | Traffic backup |  | Narrow road |
|  | No parking |  | Height restriction |
|  | Slippery road |  | Transport of hazardous load |
|  | Danger |  | Traffic light failure |
|  | Cross winds |  | Uneven surface |
|  | Delay |  | Driver on wrong carriageway |
|  | Icy roads | | |

Note: Depending on the Zoom range selected on the digital map display on the CID a white diamond icon will be displayed without a symbol in the middle. This is due to the screen resolution not allowing more than one warning icon to be displayed. Zooming out allows for a greater detail to be displayed.

## Utilizing RTTI to its Fullest Potential

The RTTI system can display traffic incidents on the map in the following three ways:

- No destination entered

- Destination entered with dynamic (automatic) route compensation

- Destination entered
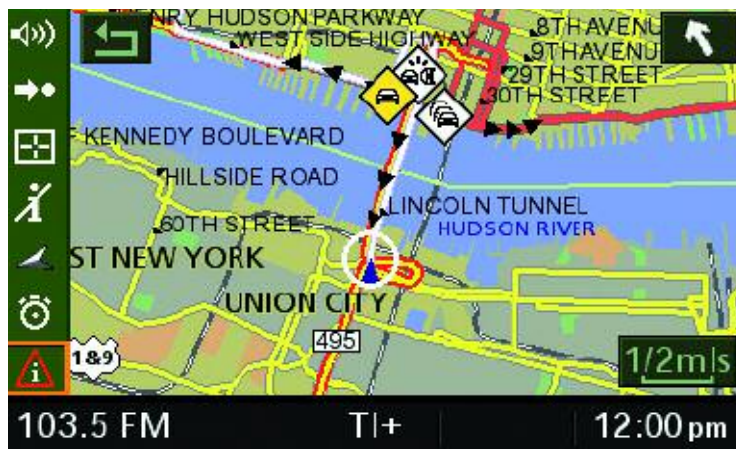
### No Destination Entered
RTTI can be utilized even if a destination is not entered in the navigation menu by displaying the map (as long as RTTI is enabled in the fifth (settings) menu).
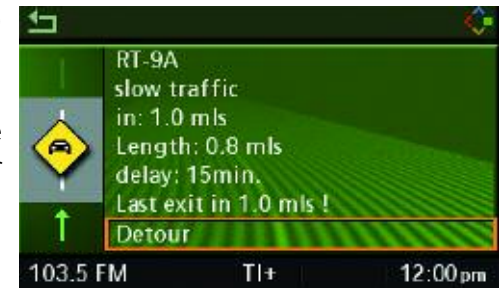
All the incident icons will be displayed in white.

### Destination Entered
To enable the RTTI feature if a destination is selected the only prerequisite is that RTTI is enabled in the fifth (settings) menu.

The icons will be displayed in two distinct colors (white or yellow) dependent on whether the incident is in the planned route.



The system will provide pop-up information which will alert the driver to pending traffic incidents. The minimum delay time must exceed 5 minutes in order to create a notification. The pop-up will also be audible and will ask the driver if they wish to detour around the traffic incident, at this time the driver will either detour or dismiss the incident.



### Destination Entered with Dynamic Route Compensation
Dynamic routing is the most advanced level of using the RTTI service, with this option the system will automatically route the vehicle around delay incidents without notifying the driver, no pop-up warnings will ever be displayed.

To enable the RTTI feature when a destination is selected, select Dynamic Route under Route Criteria in the Navigation menu.

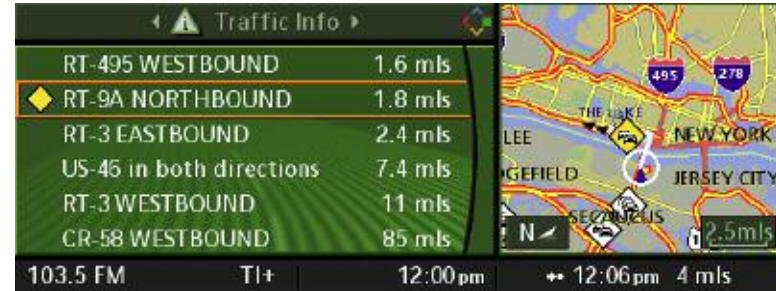Nav => Route Criteria =>
Dynamic Route



With dynamic routing enabled you will still have pending traffic incidents displayed with the yellow icons but the extent of the delay will never exceed 5 minutes, the system will automatically route the vehicle around all developing incidents when they exceed this 5 minute delay time, there will also be an announcement of a "traffic situation." Dynamic routing is only applicable when the incident is within a 25 mile radius.
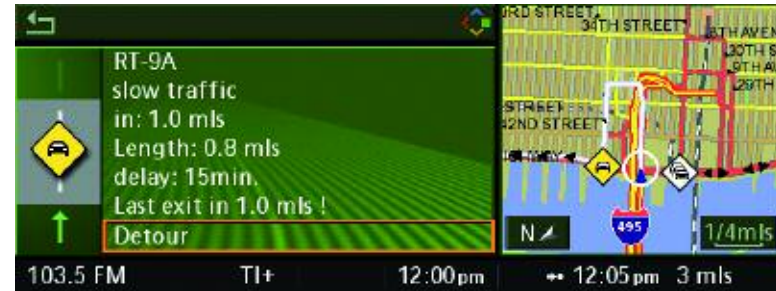
## Interface

If receiving traffic data in a covered market, the Navigation system will display the following information:

The incident list shows all received traffic events sorted by distance from the current vehicle position. The yellow diamond indicates a traffic incident on the planned route.
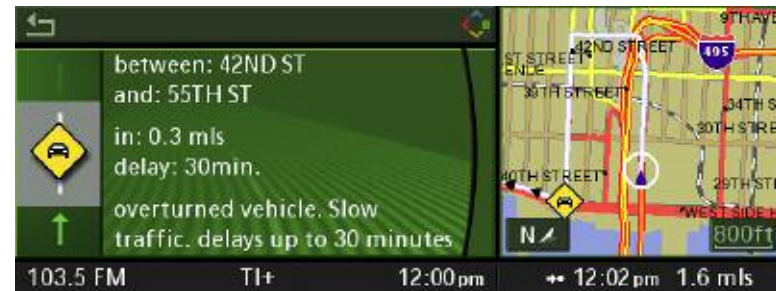
If an incident is selected from the list, the system provides more detailed information about that traffic event.

If "Dynamic route" is checked in the route criteria, the system automatically calculates the best route around the traffic.

If "Dynamic route" is not selected the navigation system gives a warning and displays a detour option. If the driver accepts the detour option, then navigation system will calculate a new route.

## Workshop Exercise - RTTI

*Utilize an instructor assigned vehicle and complete the following workshop exercise.*

What version DVD should be used in order for the RTTI feature to operate in the vehicle? _____

_____

_____

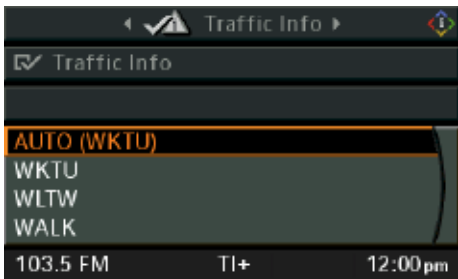What current vehicles are equipped with RTTI? _____

_____

_____

List the path taken to activate the RTTI feature. _____

_____

What does the AUTO indicate in the picture below?



_____

_____

_____

_____

What properties on the CID confirm that RTTI is active? _____

_____

_____

_____

List the path for the three ways the traffic messages are obtained.

_____

_____

_____

What are the top three traffic incident messages that are displayed (if any)? _____

_____

_____

How can detailed information on the messages be obtained?

_____

_____

*Enter a destination on the navigation computer.*

How can you determine if dynamic routing is selected? In which menu was this information obtained? _____

_____

_____

_____